Rock Island Arsenal Continuous Improvement in Safety Performance

Jerry J. Golden
SMARI-SF
DSN 793-1380
goldenj@ria.army.mil

OSC - On The Line

Briefing Agenda

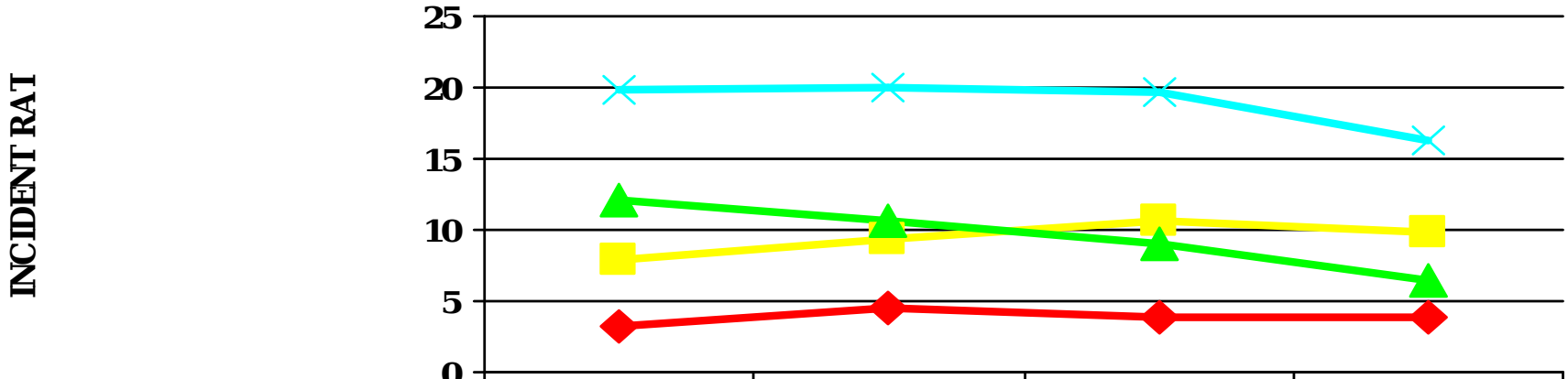
- Program Justification
- What is the CISP Program
- The Intent of the CISP Program
- The CISP Process
- Action Plans
- Expectations of the CISP Program
- Safety Performance Profile
- Accident Investigations
- Current Safety Performance
- Cost Avoidance
- Cost Per Employee
- Support Tools

Program Justification

- **Analysis of FY 1992 to FY 1995 concluded that:**
  - **No significant improvements in incident rates.**
  - **Majority of injury experiences were of the more serious type (Lost Time, OSHA Recordable).**
  - **Associated Costs (Medical, COP, Compensation, etc.) would continue to increase.**
- **Analysis showed the need to refocus on:**
  - **Accountability for Accident Prevention.**
  - **Development of Accident Prevention Strategies.**
  - **Increasing Safety Awareness.**
  - **Increasing Employee Involvement.**
  - **Setting Safety Performance Goals and Objectives.**

Program Justification

ROCK ISLAND ARSENAL
SAFETY PERFORMANCE INDICATORS
FY92 - FY95



	FY92	FY93	FY94	FY95
LOST TIME	3.26	4.49	3.94	3.84
OSHA RECORDABLE	7.85	9.34	10.62	9.86
FIRST-AID	12.02	10.71	9.08	6.39
TOTAL INCIDENT	19.87	20.05	19.70	16.25

What is the CISP Program

- **Concept: Management By Objective (MBO)**
- **Approach: Structured and Disciplined**
  - **Command Support**
  - **Setting Safety Performance Goals**
  - **Identifies Major Problem Areas**
  - **Action Planning (Objectives)**
  - **Accountability for Results**
- **Results: Continuous Improvement in Safety Performance**

The Intent of the CISP Program

- Establishes reasonable, attainable, and measurable safety performance goals at Directorate and Division levels.
- Improves Safety Performance by strengthening accident prevention strategies, before and after the fact.
- The development of Action Plans that specify objectives to meet specific performance goals and defines and assigns accountability for results at all employee levels, management and labor, alike.
- Continuous Improvement in Safety Performance.

The CISP Process

- Preview Previous Years Safety Performance
- Commander's Establishes Goals for FY
  - Incident Rates
  - Associated Costs (Medical, COP, Compensation, etc.)
- Development of Safety Performance Profiles
  - Directorate / Division / Offices
- Conduct Briefing of Safety Performance Profiles
  - Detailed Analysis of Previous Years Incidents

The CISP Process

- Directorate / Division / Offices Assign Accountability for Goals
  - Incident Rates / Special Initiatives
- Implement the Action Plan
- Monitor and Evaluate Progress of Action Plan
  - Compliance with Implementation
  - Assess Safety Performance
  - Make Necessary Adjustments
- Reporting Results
  - Quarterly Reviews with Commander / Director
  - Safety Office provides monthly Safety Performance Updates

Action Plans

- **Directorate / Division Actions Plans:**
  - **Injury / Illness Incident Rates are compatible with Commander's Goals and Objectives.**
  - **Who will be accountable / responsible for implementing the action plan.**
  - **What objectives will be implemented to address problem areas.**
  - **When the objectives will be implemented.**
  - **How the objectives will be measured and monitored to evaluate progress and effectiveness.**
- **Safety Office will conduct periodic reviews of Action Plans.**

Expectations of the CISP Program

- Continuous Improvement in Safety Performance
  - Fewer Employees Injured and Less Severely
  - Reduced Incident Rates
- Reduced Current and Future Associated Costs (Medical, COP, Compensation, etc.)
  - Positive Impact on Profitability
  - Compensation Cost Avoidance
- Increased Accountability for Accident Prevention
  - Intervention at the Right Level

Expectations of the CISP Program

- **Ability to Successfully Benchmark Against World-Class Organizations**
  - **Lost Time Frequency Rates Less Than 1**
- **Increased Productivity and Overall Efficiency**
  - **Improved Reputation**
  - **Increased Competitive Posture**
- **Reduces Possible Audits from Other Agencies**
  - **OSHA**
- **Increased Employee Morale**

Definitions

- **Lost Time Injury: A work related injury or illness involving one or more full days away from work beyond the date of occurrence.**
- **OSHA Lost Work Day Case: A work related injury or illness that causes any loss of time from work beyond the day or shift on which it occurred.**
  - ***Note: New AMC guidance requires the reporting of this statistic to HQ.***

Definitions

- **OSHA Recordable Injury: All work related injuries and illnesses, and those injuries that result in loss of consciousness, lost workdays (days away from work and/or restricted activity), transfer to another job, or require medical treatment beyond simple first-aid.**

Definitions

- **First-Aid Injury: Any injury one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, that do not ordinarily require medical treatment.**
- **Severity Rate: The number of lost workdays away from work per 200,000 hours worked.**

Frequency Rates

Calculating Frequency Rates:

Frequency Rate = (Number of Incidents) x (200,000 Hours)*

Number of Exposure Hours

*** 200,000 Hours = (100 persons) x (2000 Hours) or 1 Man Year**

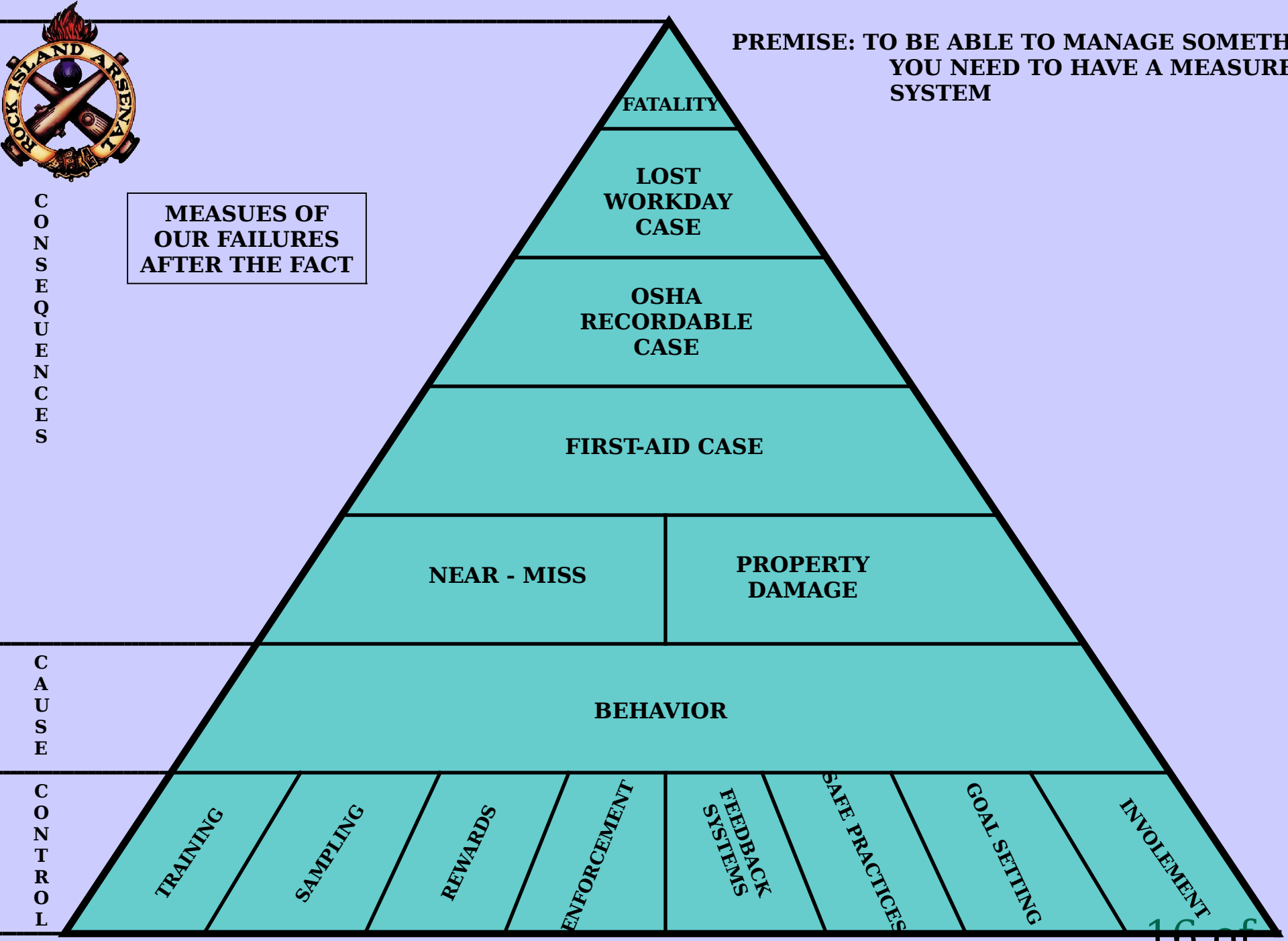
Example:

Total Incident Rate = (120) x (200,000 Hours)
2,169,851.5

= 11.06

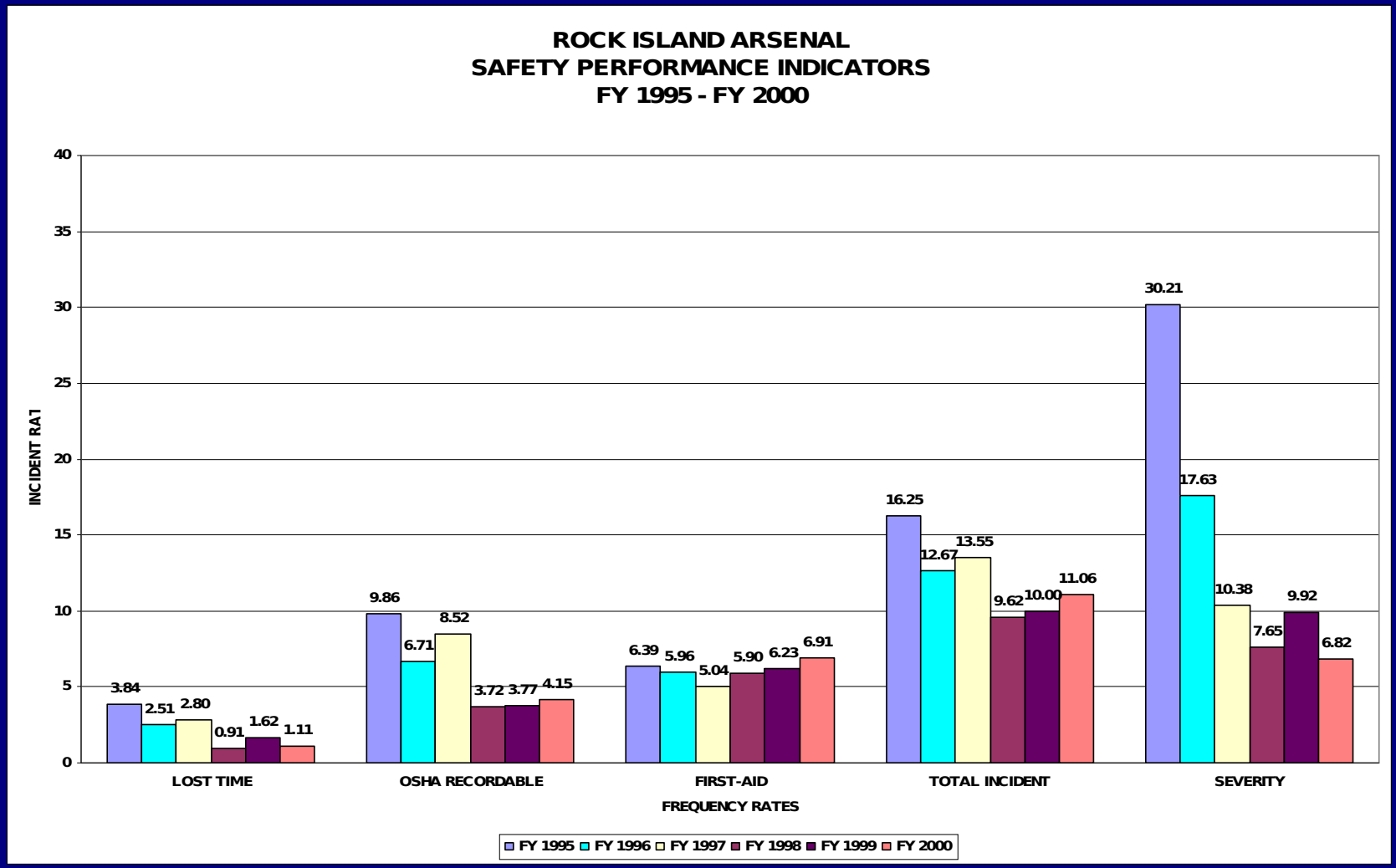
PREMISE: TO BE ABLE TO MANAGE SOMETH
YOU NEED TO HAVE A MEASURE
SYSTEM

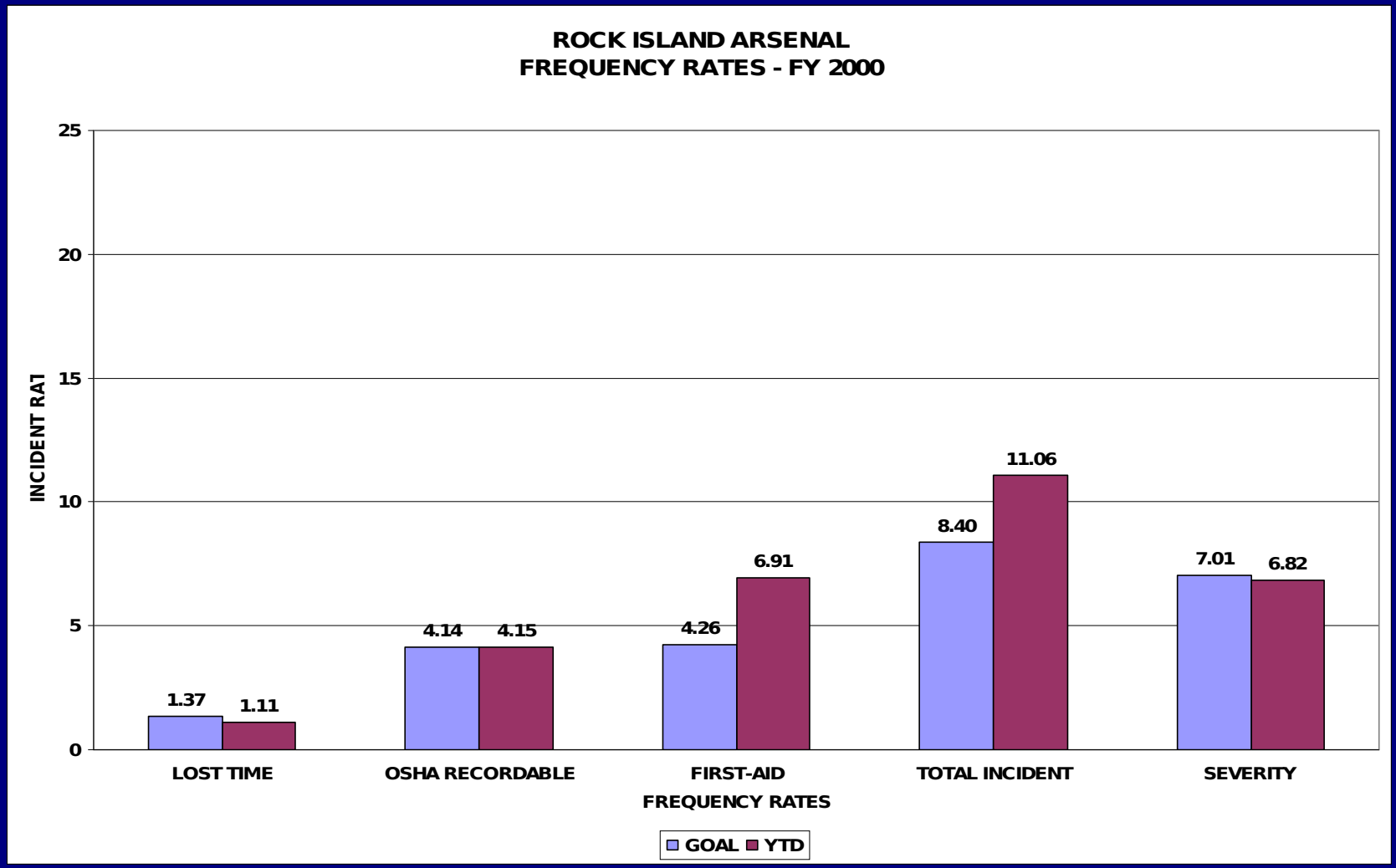
MEASUES OF OUR FAILURES AFTER THE FACT



OSHA Cases and Frequency Rates

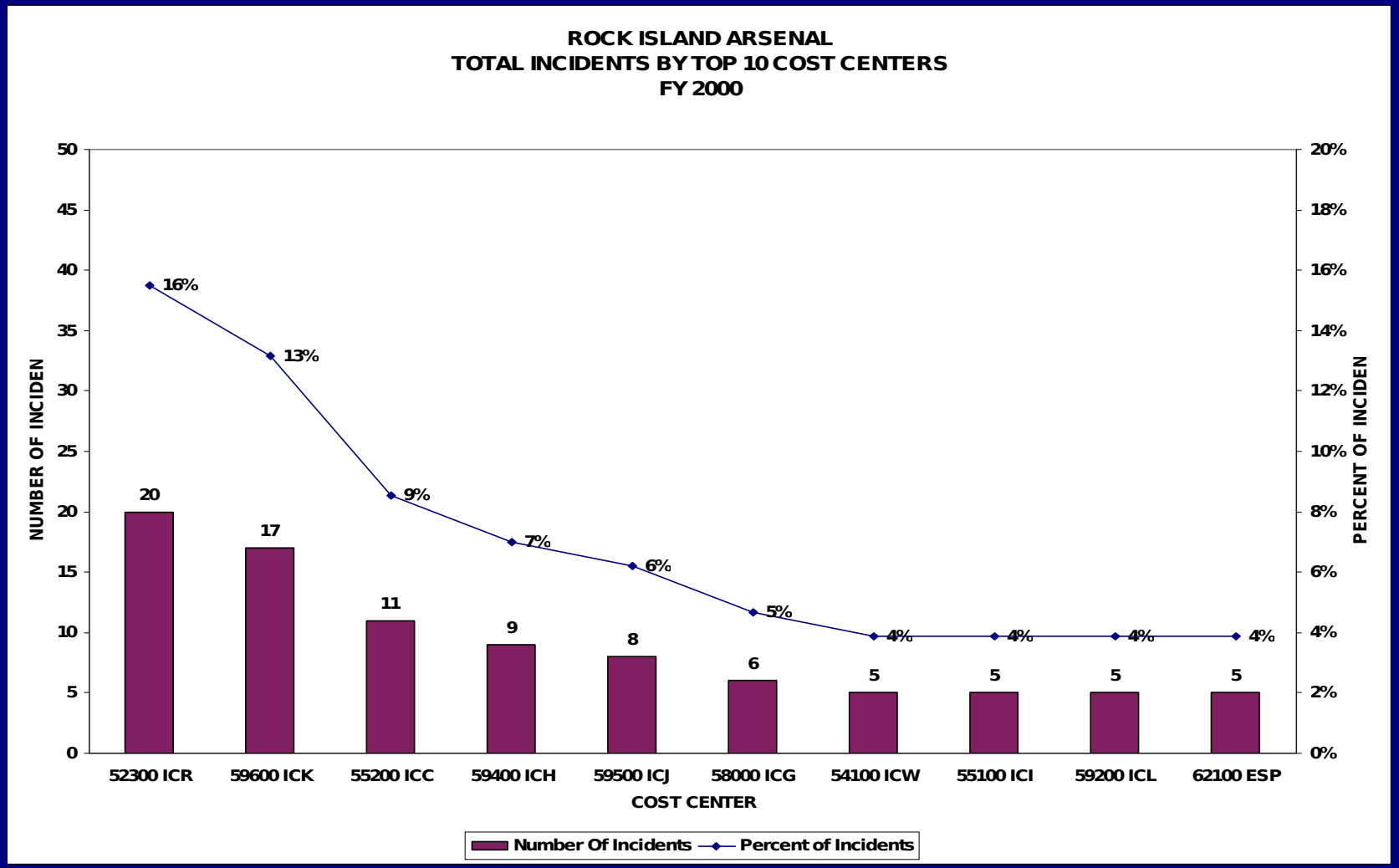
CASES	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
LOST TIME	72	43	45	13	21	12
OSHA RECORDABLE	185	115	137	53	49	45
FIRST-AID	120	102	81	84	81	75
TOTAL	305	217	218	137	130	120
LOST WORKDAYS	567	302	167	109	129	74
HOURS OF EXPOSURE	3,753,449.0	3,425,361.0	3,217,248.0	2,848,611.3	2,600,009.4	2,169,851.5
FREQUENCY RATES	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
LOST TIME	3.84	2.51	2.80	0.91	1.62	1.11
OSHA RECORDABLE	9.86	6.71	8.52	3.72	3.77	4.15
FIRST-AID	6.39	5.96	5.04	5.90	6.23	6.91
TOTAL INCIDENT	16.25	12.67	13.55	9.62	10.00	11.06
SEVERITY	30.21	17.63	10.38	7.65	9.92	6.82

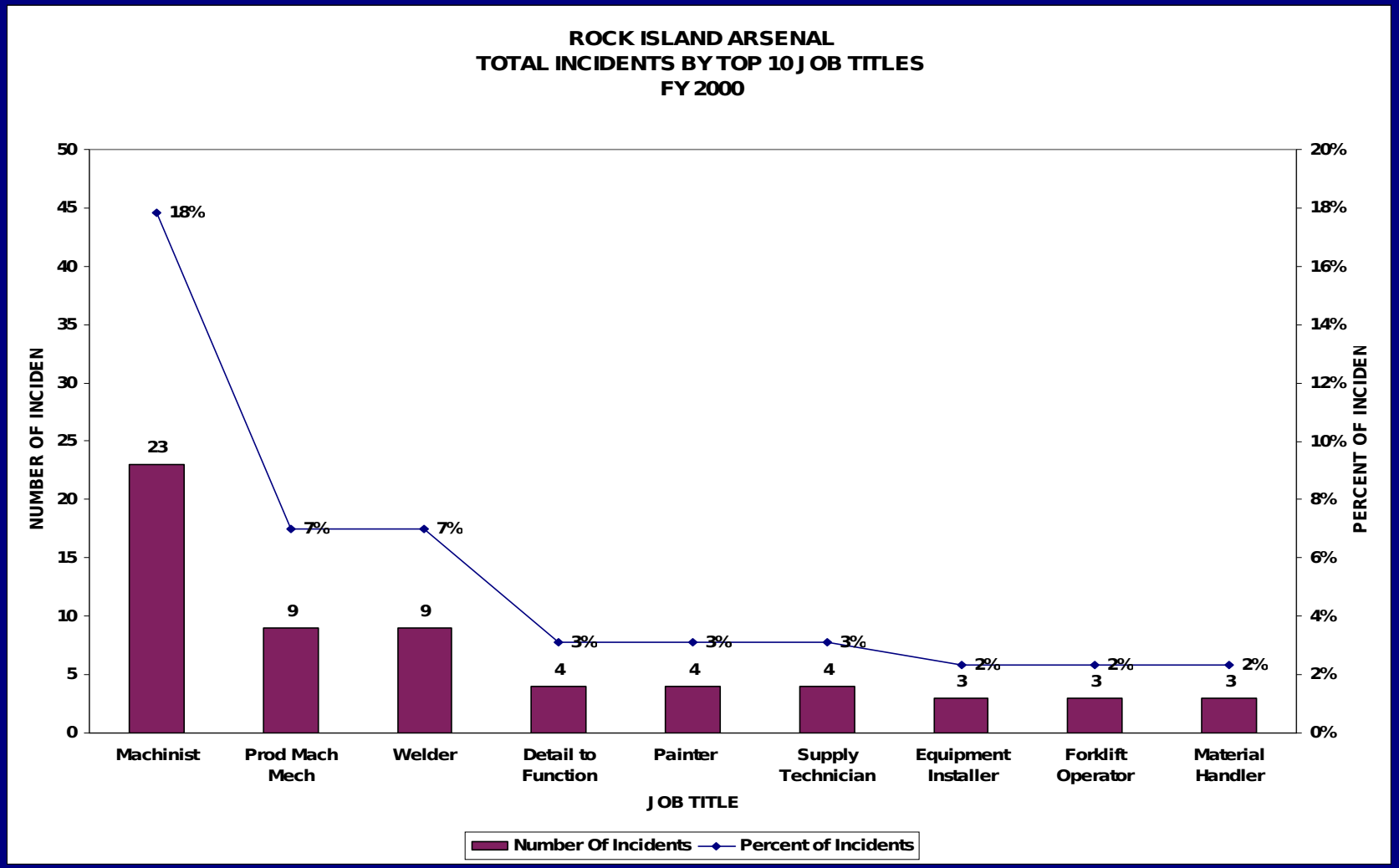

ROCK ISLAND ARSENAL
SAFETY PERFORMANCE INDICATORS
FY 1995 - FY 2000
INCIDENT RATE
40
35
30
25
20
15
10
5
0
3.84
2.51
2.80
0.91
1.62
1.11
9.86
6.71
8.52
3.72
3.77
4.15
6.39
5.96
5.04
5.90
6.23
6.91
16.25
12.67
13.55
9.62
10.00
11.06
30.21
17.63
10.38
7.65
9.92
6.82
LOST TIME
OSHA RECORDABLE
FIRST-AID
TOTAL INCIDENT
SEVERITY
FREQUENCY RATES
FY 1995
FY 1996
FY 1997
FY 1998
FY 1999
FY 2000

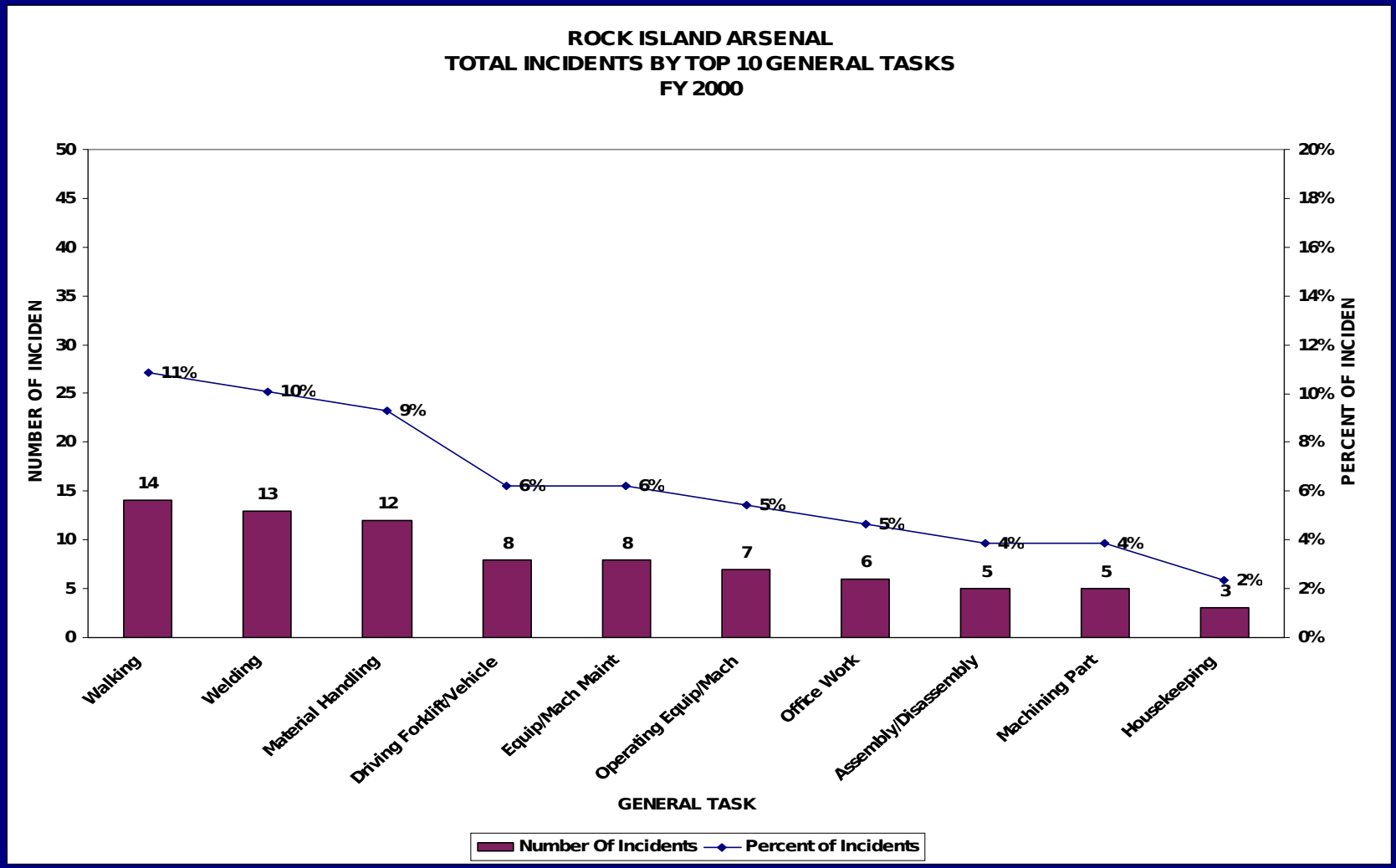

ROCK ISLAND ARSENAL
FREQUENCY RATES - FY 2000
INCIDENT RATE
25
20
15
10
5
0
1.37
1.11
4.14
4.15
4.26
6.91
8.40
11.06
7.01
6.82
LOST TIME
OSHA RECORDABLE
FIRST-AID
TOTAL INCIDENT
SEVERITY
FREQUENCY RATES
GOAL
YTD

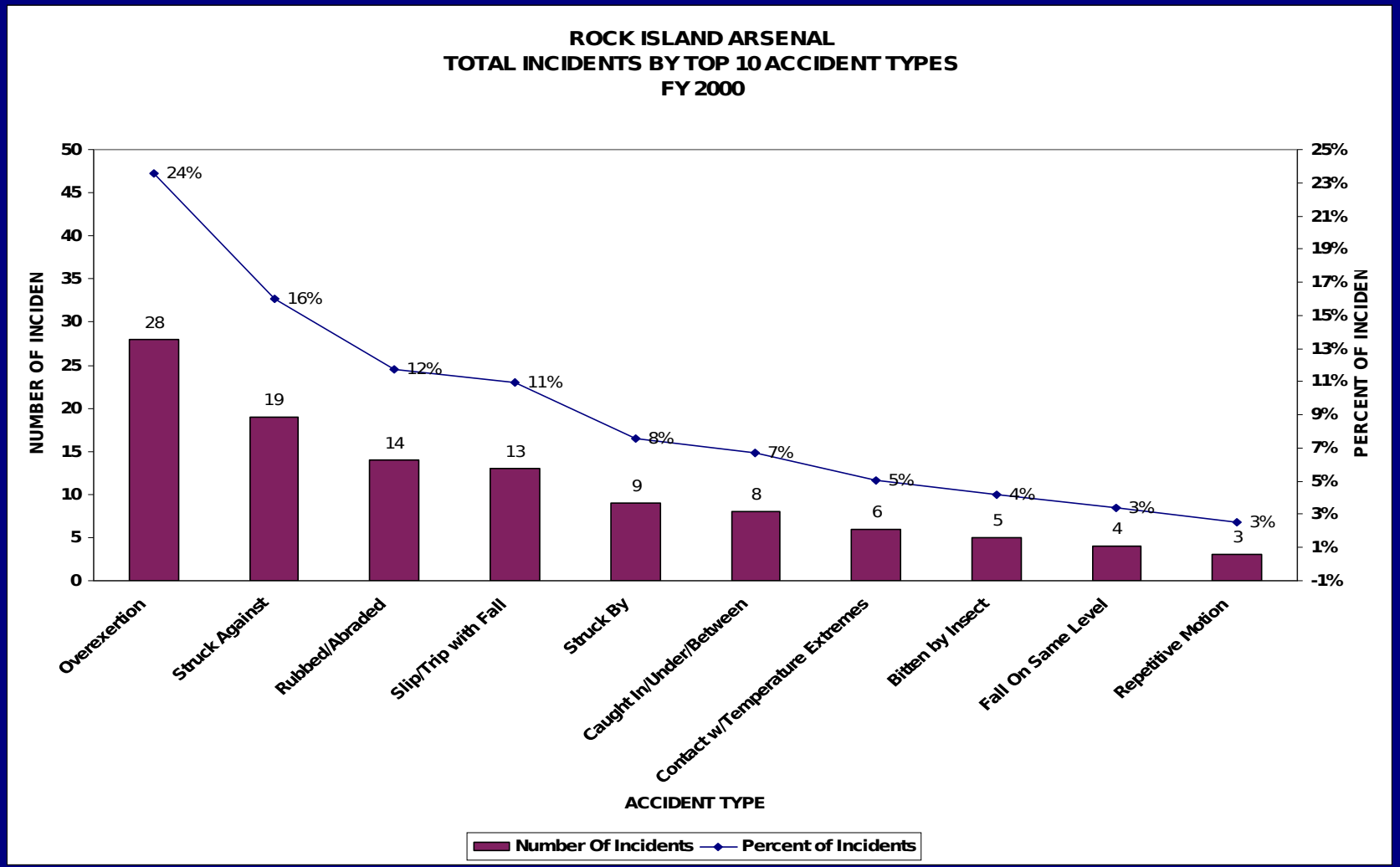
Current Safety Performance

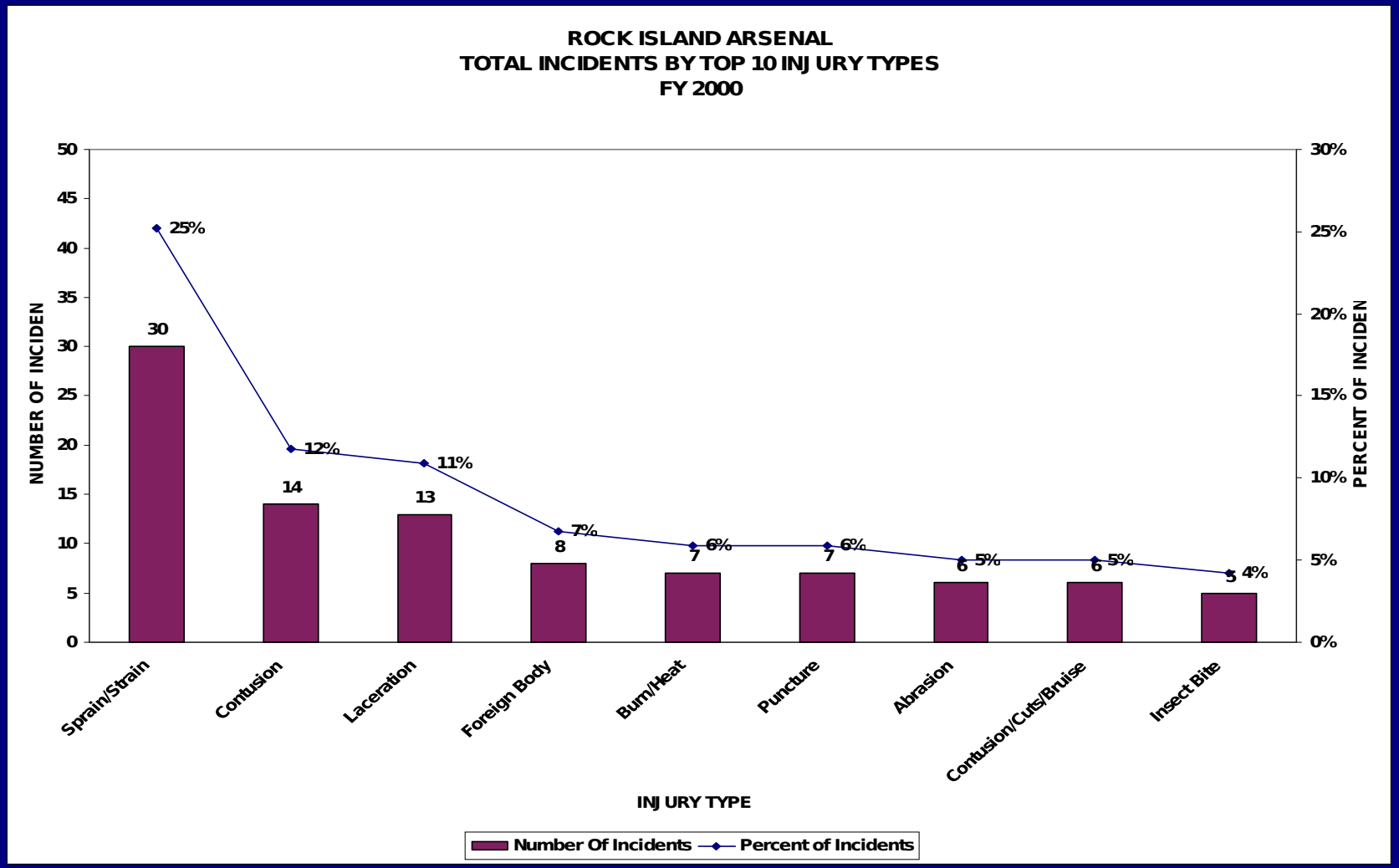
- **RIA Safety Performance Profile**
  - **Analysis by Top 10:**
    - **Cost Centers**
    - **Job Titles**
    - **General Tasks**
    - **Accident Types**
    - **Injury Types**
    - **Body Parts**
    - **Injury Sources**

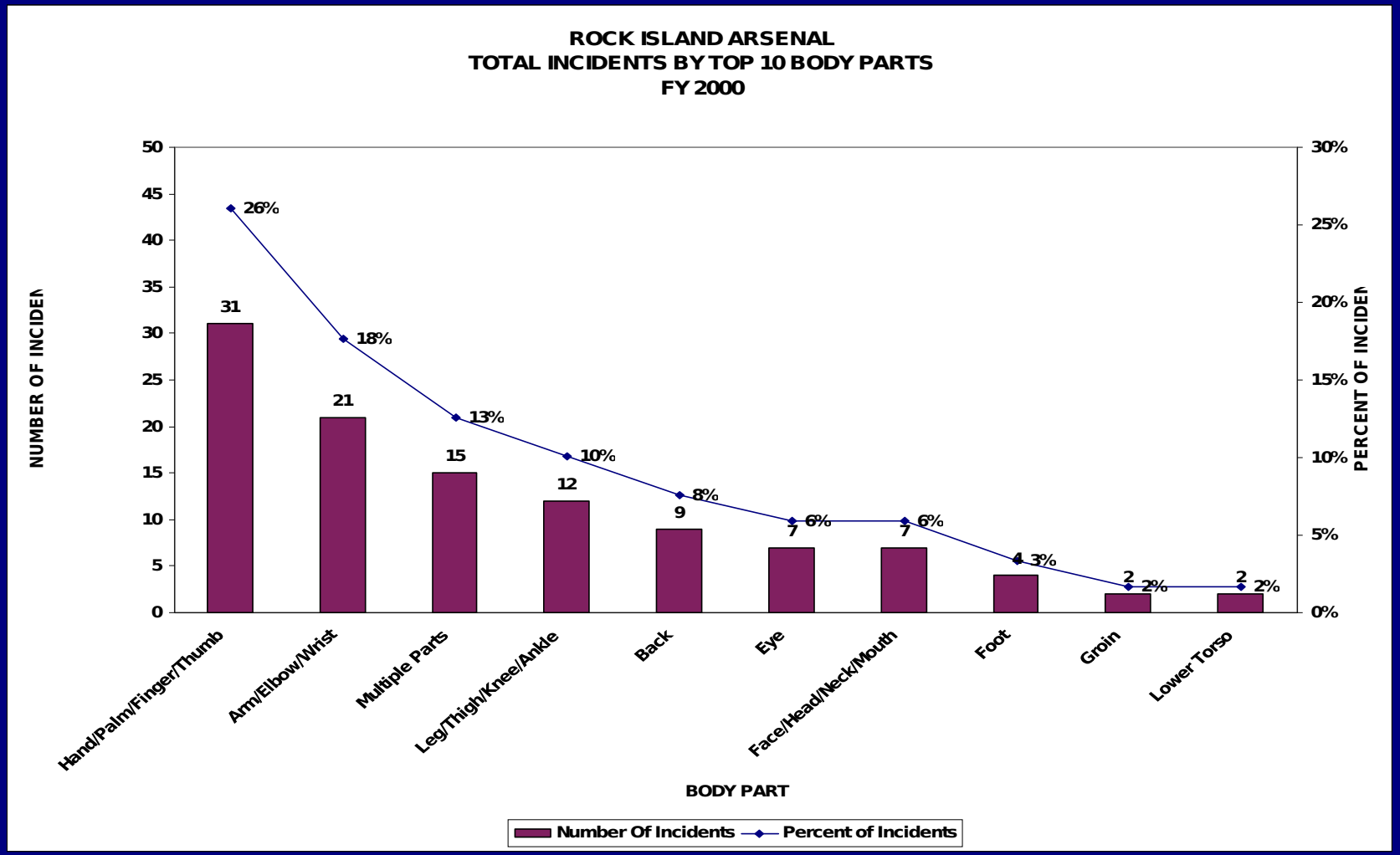

ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 COST CENTERS
FY 2000
NUMBER OF INCIDEN
PERCENT OF INCIDEN
50
45
40
35
30
25
20
15
10
5
0
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
16%
13%
9%
7%
6%
5%
4%
4%
4%
4%
20
17
11
9
8
6
5
5
5
5
52300 ICR
59600 ICK
55200 ICC
59400 ICH
59500 ICJ
58000 ICG
54100 ICW
55100 ICI
59200 ICL
62100 ESP
COST CENTER
Number Of Incidents
Percent of Incidents

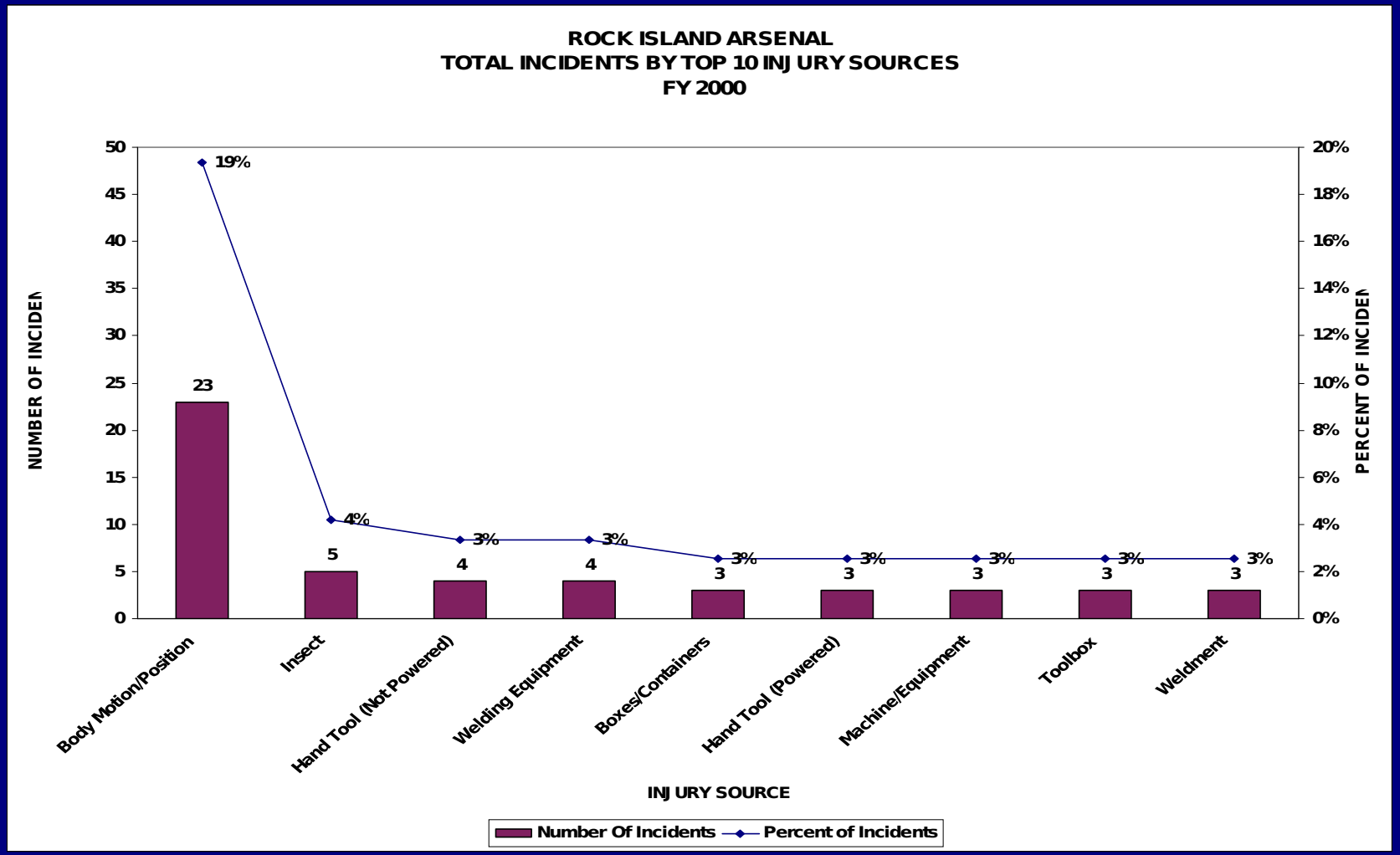

ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 JOB TITLES
FY 2000
NUMBER OF INCIDEN
PERCENT OF INCIDEN
JOB TITLE
Machinist
Prod Mach Mech
Welder
Detail to Function
Painter
Supply Technician
Equipment Installer
Forklift Operator
Material Handler
23
9
9
4
4
4
3
3
3
18%
7%
7%
3%
3%
3%
2%
2%
2%
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 GENERAL TASKS
FY 2000
NUMBER OF INCIDEN
PERCENT OF INCIDEN
50
45
40
35
30
25
20
15
10
5
0
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
14
13
12
8
8
7
6
5
5
3
11%
10%
9%
6%
6%
5%
5%
4%
4%
2%
Walking
Welding
Material Handling
Driving Forklift/Vehicle
Equip/Mach Maint
Operating Equip/Mach
Office Work
Assembly/Disassembly
Machining Part
Housekeeping
GENERAL TASK
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 ACCIDENT TYPES
FY 2000
NUMBER OF INCIDEN
PERCENT OF INCIDEN
ACCIDENT TYPE
Overexertion
Struck Against
Rubbed/Abraded
Slip/Trip with Fall
Struck By
Caught In/Under/Between
Contact w/Temperature Extremes
Bitten by Insect
Fall On Same Level
Repetitive Motion
28
19
14
13
9
8
6
5
4
3
24%
16%
12%
11%
8%
7%
5%
4%
3%
3%
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 INJURY TYPES
FY 2000
NUMBER OF INCIDEN
PERCENT OF INCIDEN
50
45
40
35
30
25
20
15
10
5
0
30%
25%
20%
15%
10%
5%
0%
30
14
13
8
7
7
6
6
5
25%
12%
11%
7%
6%
6%
5%
5%
4%
Sprain/Strain
Contusion
Laceration
Foreign Body
Burn/Heat
Puncture
Abrasion
Contusion/Cuts/Bruise
Insect Bite
INJURY TYPE
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 BODY PARTS
FY 2000
NUMBER OF INCIDEN
PERCENT OF INCIDEN
50
45
40
35
30
25
20
15
10
5
0
30%
25%
20%
15%
10%
5%
0%
31
21
15
12
9
7
7
4
2
2
26%
18%
13%
10%
8%
6%
6%
3%
2%
2%
Hand/Palm/Finger/Thumb
Arm/Elbow/Wrist
Multiple Parts
Leg/Thigh/Knee/Ankle
Back
Eye
Face/Head/Neck/Mouth
Foot
Groin
Lower Torso
BODY PART
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 INJURY SOURCES
FY 2000
NUMBER OF INCIDEN
PERCENT OF INCIDEN
50
45
40
35
30
25
20
15
10
5
0
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
19%
4%
3%
3%
3%
3%
3%
3%
3%
23
5
4
4
3
3
3
3
3
Body Motion/Position
Insect
Hand Tool (Not Powered)
Welding Equipment
Boxes/Containers
Hand Tool (Powered)
Machine/Equipment
Toolbox
Weldment
INJURY SOURCE
Number Of Incidents
Percent of Incidents

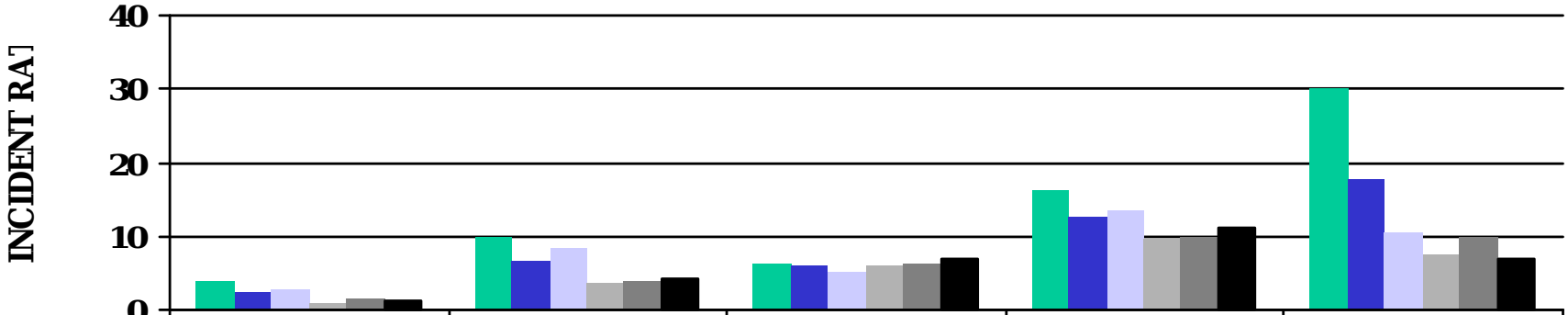
Accident Investigation

- **Commander Sets Policy on Conducting Accident Investigations.**
  - **All policies are formal and written.**
  - **Accidents are reported within 2 hours of the occurrence.**
  - **Accidents are investigated with 72 hours of the occurrence.**
  - **Safety After Accident Review (SAAR) Accident Investigation Report is completed for incident and forwarded.**
  - **SMCRI Form 60, Employee Dispensary and Status Form, shall be completed for all incidents requiring treatment at RIA Health Clinic.**

"All accidents, no matter how minor they appear, shall be reported and investigated according to established policies and procedures."

Current Safety Performance

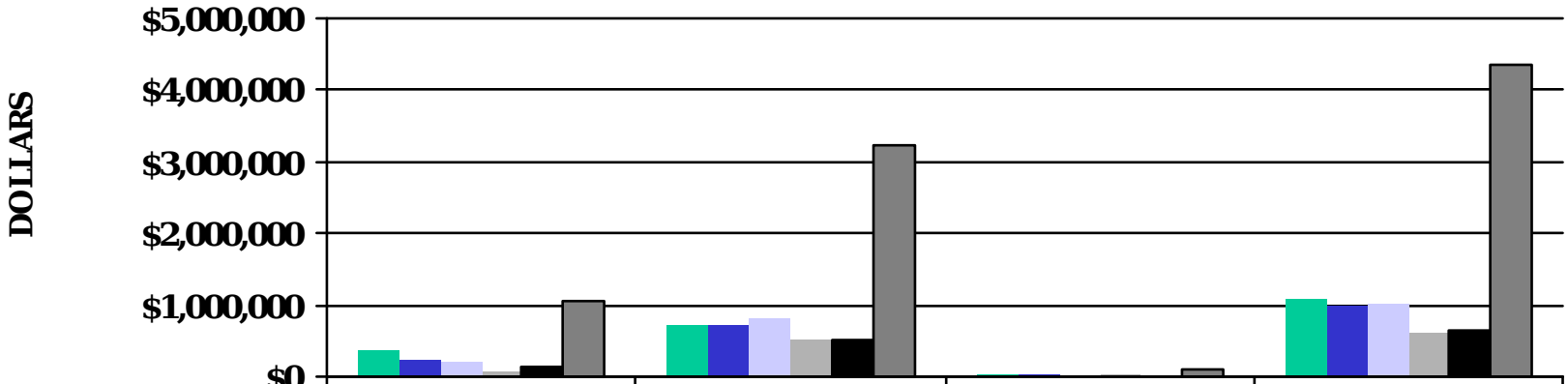
ROCK ISLAND ARSENAL
SAFETY PERFORMANCE INDICATORS
6 YEAR PROFILE
FY 1995 - FY 2000



	LOST TIME	OSHA RECORDABLE	FIRST-AID	TOTAL INCIDENT	SEVERITY
FY95	3.84	9.86	6.39	16.25	30.21
FY96	2.51	6.71	5.96	12.67	17.63
FY97	2.80	8.52	5.04	13.55	10.38
FY98	0.91	3.72	5.90	9.62	7.65
FY99	1.62	3.77	6.23	10.00	9.92
FY00	1.11	4.15	6.91	11.06	6.82

Current Safety Performance

ROCK ISLAND ARSENAL
SAFETY PERFORMANCE INDICATORS
COSTS
FY 1996 - FY 2000



	MEDICAL	COMPENSATION	COP PAID	TOTAL
FY96	$372,365	$700,460	$24,767	$1,097,591
FY97	$225,005	$721,323	$32,069	$978,397
FY98	$217,401	$800,899	$8,995	$1,027,294
FY99	$79,867	$496,298	$27,297	$603,462
FY00	$150,208	$496,802	$15,033	$662,042
ACCUMULATED	$1,044,845	$3,215,781	$108,161	$4,368,787

Cost Avoidance

Calculating Cost Avoidance:

Cost Avoidance = [(Base Year Lost Time Rate / Current Year Lost Time Rate) x (Current Year Total Cost)] - (Total Cost)

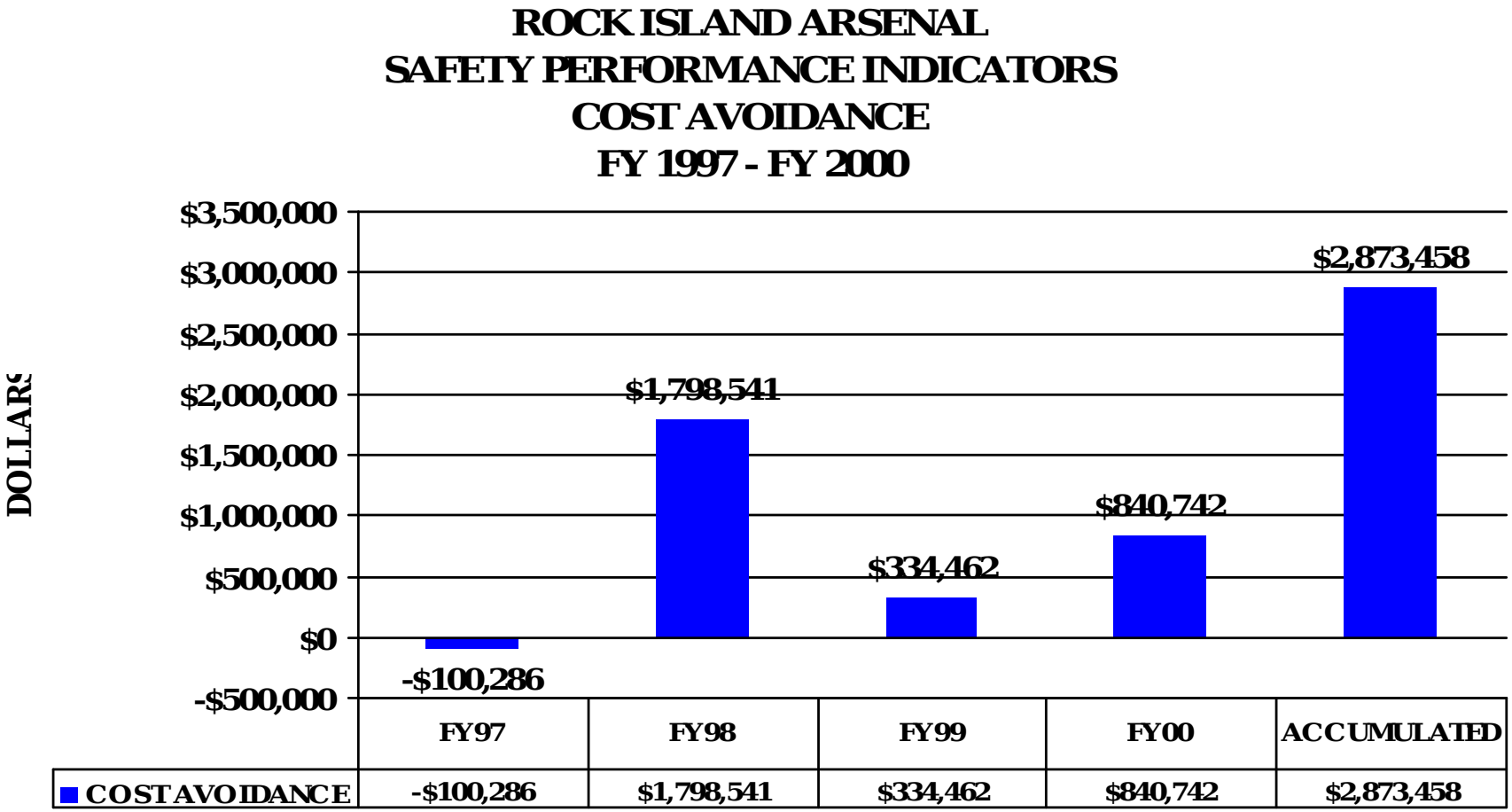
Example: Calculating FY99 Cost Avoidance using FY96 Lost Time Rate as the Base Year Lost Time Rate.

Cost Avoidance = [(2.51/1.62) x $ 603,462] - $603,462

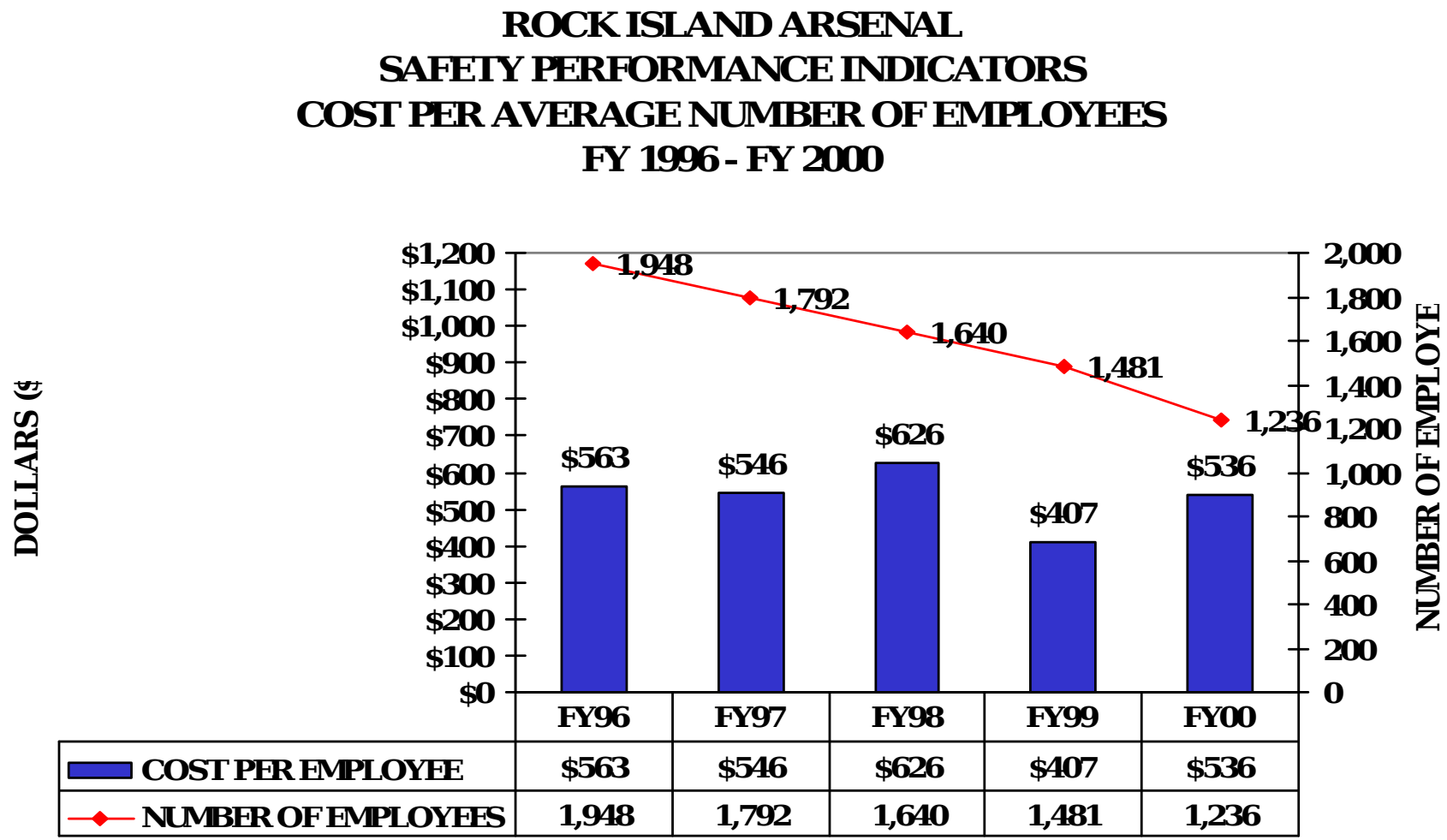
= $ 334,462

Note: Lost Time Rate is the best indicator for

Cost Avoidance



Cost Per Employee



Support Tools

- Monthly Safety Meeting
  - Staff
  - Directorate and Teams
- Established POCs in Directorates and Offices
- Job Safety Analysis
  - Accident Prevention
- Monthly CISP Results
  - Commander / Directorate / Office / Cost Center
  - E-mailed in Microsoft Excel spreadsheet
- Computer Based Programs
  - IC/UC, WCCMS, SMS
  - OSHA 600 Collateral Duty
  - Safety Flyers

Future Initiatives

- **Accident Reporting and Recording**
  - **Network Version – Safety Management Software (SMS)**
- **Standardized Initial Notification and Scheduling of SAAR Information**
- **Computer Based Training (CBT)**
  - **Safety and Occupational Health Training**

RIA Safety Office POCs

- **William C. Brown, Chief**
  - Rock Island Arsenal Safety Office
  - Phone: 309-782-1380 (Comm), 793-1380 (DSN)
  - E-Mail: BrownW@RIA.ARMY.MIL
- **Jerry J. Golden, Safety Engineer**
  - Rock Island Arsenal Safety Office
  - Phone: 309-782-1380 (Comm), 793-1380 (DSN)
  - E-Mail: GoldenJ@RIA.ARMY.MIL

ROCK ISLAND ARSENAL
CENTER FOR EXCELLENCE